L1190100001-Madison Co.
Owens Illinois Inc.
ILD 006276422
SF/HRS

CERCLA
Site Inspection Prioritization Report

Illinois Environmental Protection Agency

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TABLE OF CONTENTS

Section		Page
1	SITE BACKGROUND	1
	1.1 INTRODUCTION	1
	1.2 SITE DESCRIPTION	1
	1.3 SITE HISTORY	2
	1.4 APPLICABILITY OF OTHER STATUTES	4
2	STEP ACTIVITIES	5
	2.1 RECONNAISSANCE INSPECTION	5
	2.2 GROUNDWATER SAMPLING	6
	2.3 SOIL/SEDIMENT SAMPLING	6
	2.4 KEY SAMPLES	7
3	IDENTIFICATION OF SOURCES	9
	3.1 LANDFILL	9
	3.2 ABOVE GROUND STORAGE TANKS	9
	3.3 SURFACE IMPOUNDMENT	10
4	MIGRATION PATHWAYS	11
	4.1 GROUNDWATER PATHWAY	11
	4.2 SURFACE WATER PATHWAY	12
	4.3 AIR PATHWAY	13
	4.4 SOIL EXPOSURE PATHWAY	14

Figures and tables are located at the end of the text.

APPENDICES

VOLUME I - INTEGRATED ASSESSMENT REPORT

A SITE 4-MILE RADIUS MAP

B 15 MILE SURFACE WATER MAP

C TARGET COMPOUND LIST

VOLUME II - INTEGRATED ASSESSMENT ANALYTICAL RESULTS

D TARGET COMPOUND LIST ANALYTICAL RESULTS

-0225-

SECTION 1

SITE BACKGROUND

1.1 INTRODUCTION

On September 30, 1994, the Illinois Environmental Protection Agency's Site Assessment Unit was tasked by Region V of the United States Environmental Protection Agency (U.S. EPA) to conduct a Site Inspection Prioritization (SIP) of the Owens Illinois site (ILD# 006276422) in Madison County, Illinois.

Owens Illinois was placed on the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) in August of 1982. This action was the result of a citizen complaint that waste piles of checker dust were at the site during a demolition and remediation conducted at the facility in 1983. Since the 1870's many operations have taken place at the property that may have contributed to contamination of the soils. Refer to the site history section of this report for more detailed information on site operations. Ecology & Environment conducted a CERCLA Screening Site Inspection of the Owens Illinois site in 1990 which documented the presence of contamination in the soils. A number of soil samples were collected around the facility which revealed a variety of contaminants at the property.

1.2 SITE DESCRIPTION

The address given for the Owens Illinois site is 1625 East

Broadway Avenue in Alton, Illinois. The site topography is generally flat with half of the property either paved or covered by buildings. The property is approximately 125 acres. The area immediately surrounding the site is a mixture of industrial, commercial, and residential. Laclede Steel, an active steel manufacturing company, borders the site to the east. The area north of the site across Broadway Avenue is a mixture of commercial and residential land use. The Mississippi River borders the property to the south.

The legal description given for Owens Illinois is the Southeast 1/4 of Section 13, Township 5 North, Range 10 West of the Third Principle Meridian, Madison County. A four mile radius map of the area around Owens Illinois and a 15 mile surface water map can be found in Appendix A and Appendix B of this report. To reach the site travel west on State Route 140 into Alton. Take a left on State Route 3 heading south for approximately 1.5 miles. Take a right at the intersection of Route 3 and Broadway Avenue heading west. Continue west on Broadway for roughly two miles, the facility is on the south side of Broadway Avenue.

1.3 SITE HISTORY

The Alton plant is an inactive facility which last operated under the name of Owens-Brockway Glass Containers of which Owens Illinois, Incorporated is the parent company. Operations at the facility took place from 1873 until 1993. The facility was

originally owned and operated by the Illinois Glass Company. In 1928 the Illinois Glass Company merged with the Owens Bottle Company and formed the Owens Illinois Glass Company. From 1928 until 1983 manufacturing operations at the site included production of glass, wood boxes, corrugated cardboard boxes, and ink printing. A permitted landfill was operated at the property from 1971 to 1979 to dispose of solid wastes generated during production.

A partial demolition and remediation of the site was conducted by an environmental engineering firm in 1983. During this time a series of monitoring wells were installed on site by the firm. The facility's eight furnaces were removed, the tank farm southeast of the foundry was demolished, and a series of surface impoundments were abandoned. The first surface impoundment was an oil collection pond. Process water from the glass factory was discharged to the lagoon where quench oil was skimmed and glass particles settled out. Two cooling ponds down the line finished the settling process. When these cooling ponds reached capacity the water was pumped to the Mississippi River via a NPDES discharge.

The demolition continued up until 1986 during which time furnace dust, checker dust, and asbestos were removed by an environmental contractor. The last production activities to take place at the plant were a molding and foundry facility. The molding facility

produced molds for glass containers and television picture tubes. The foundry produced iron castings and aluminum-bronze castings. All of the wastes generated during these processes were disposed or recycled via approved methods. At times over the previous two decades Owens was cited for noncompliance with EPA regulations, but had taken corrective actions when instructed to do so. During this time the facility also had a RCRA small quantity generator permit on file with the IEPA. The Illinois Department of Transportation (IDOT) is currently conducting a feasibility study of the site for placement of a road through the property. There isn't any data available from IDOT at this time.

1.4 APPLICABILITY OF OTHER STATUTES

This section addresses any other EPA programs that may be associated with Owens Illinois. The facility had an application for a Special Waste generator permit on file with the IEPA. Given the nature of operations it is unlikely that the site was or is subject to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Atomic Energy Act (AEA), or the Uranium Mill Tailings Radiation Control Act (UMTRCA).

SECTION 2

SITE INSPECTION PRIORITIZATION ACTIVITIES

2.1 RECONNAISSANCE INSPECTION

A site reconnaissance of the Owens Illinois facility was conducted by the IEPA on February 8, 1995. Access to the property was obtained via a telephone conversation with Mr. Walter Long, an Environmental Manager for the Owens Illinois Corporation. Mr. Long indicated that he would be present during the sampling event and that Owens Illinois wished to split samples with the IEPA. Mr. Nick Nischwitz, an employee of Owens Illinois, was present during the site recon. The waste piles identified in the citizen complaint have long since been removed. All of the buildings slated for demolition have been razed. The landfill area is reportedly capped with two feet of clay and has a good vegetative cover.

The topography of the site is relatively flat with the exception of the levee to the south which protects the Alton area from flooding by the Mississippi River. A drainage ditch runs parallel to the levee and drains the area north of the levee towards the east. Shields Branch, which is the run off for the storm sewer system in the residential area north of the site, runs north to south through the eastern portion of the property. Shields Branch empties into a drainage ditch which runs along the southern edge of the site. At its largest, the site occupied 180 acres, it is currently 125 acres in size due to a recent

reconstruction of the levee and road on the southern border of the property. The nearest residences are located roughly 150 feet north of the site across Broadway Avenue.

2.2 GROUNDWATER SAMPLING

Five groundwater samples were collected during the 1995 CERCLA inspection. These samples were taken from on site monitoring wells. Refer to the map at the end of the narrative section for sample locations. Temperature, pH, and specific conductivity were taken before collecting the samples. The wells were purged and allowed to recharge prior to sampling. The required preservatives were added to the bottles after the samples were obtained. The sample containers were packaged and sealed in accordance with previously established Site Assessment Program methods and procedures. The samples were analyzed for the Target Compound List by IEPA Laboratories in Champaign and Springfield, Illinois.

2.3 SOIL/SEDIMENT SAMPLING

IEPA personnel collected eight soil/sediment samples during the March 15 & 16, 1995, CERCLA inspection to determine if Target Compound List contaminants are present at Owens Illinois and/or along the surface water pathway. The samples were collected with either a stainless steel trowel or auger. Refer to the map at the end of the narrative section for sample locations. The soils were transferred from the sampling device directly into sample

containers supplied by the IEPA Bottling Center. The sample containers were packaged and sealed in accordance with previously documented Site Assessment Program methods and procedures. The samples were analyzed for the Target Compound List by IEPA laboratories in Champaign and Springfield, Illinois.

2.4 KEY SAMPLES

Soil samples were collected from the on site landfill and in the area of the tank farm during the inspection. The landfill sample was collected at a depth of approximately eight feet. The demolished tank farm is the likely source for the polynuclear aromatic (PNA) and polychlorinated biphenyl (PCB) contamination found in duplicate soil samples X102 & X103. Removal action levels were not exceeded in any of the soil samples although some did meet Hazard Ranking System (HRS) criteria for an observed release.

A series of sediment samples were collected along Shields Branch, a perennial stream which runs through and drains the site. A sample was also collected from an on site surface impoundment. Analysis of the samples revealed volatiles, semi-volatiles, PCB's, and metals at levels that meet HRS criteria for an observed release.

The concentrations of contaminants found in the sediment samples were compared the Ontario Aquatic Sediment Quality Guidlines.

These sediment quality guidelines are nonregulatory ecological benchmark values that serve as indicators of potential aquatic impacts. The severe effect levels (SELs) represent heavily polluted conditions that are expected to affect the health of benthic organisms. Nearly all of the metals fell between the established lowest effect levels (LELs) and the SELs. In two of the samples, the SEL had been exceeded in some metals. The PCBs tended to fall between the LEL and the SEL as well.

Five groundwater samples were collected from on site monitoring wells. In the downgradient samples, metals meet HRS criteria for an observed release. None of the contaminants exceed the established Removal Action Levels. A copy of all of the analytic results is provided in the second volume of this report.

SECTION 3

IDENTIFICATION OF SOURCES

3.1 LANDFILL

During the 1970's, Owens Illinois disposed of wastes in a 30 acre landfill located on site. This landfill was permitted by the IEPA and was reportedly used for disposal of non-hazardous waste generated at the facility. Samples were not collected from the landfill during the 1990 Screening Site Inspection.

During the 1995 CERCLA SIP deep soil sample X104 was collected in area of the landfill at a depth of eight feet. Analysis of this sample revealed PNAs, PCBs, and metals that meet the CERCLA criteria for an observed release. Based upon analytic results the landfill has been designated as a source.

3.2 ABOVE GROUND STORAGE TANKS

During the inspection duplicate soil samples were collected from the area of the property where a tank farm stood until the partial demolition of the facility in 1983. These tanks reportedly contained fuel oils which were burned to power operations at the Owens Illinois plant. Sanborn Fire Insurance maps for the property indicate that the above ground tanks had a total storage capacity of 4,798,600 gallons.

Analytical results of duplicate soil samples X102 and X103 collected in the tank farm area indicate the presence of PNAs and

PCBs and concentrations well above background. Given that the storage tanks were used to contain fuel oils, this would lead to the conclusion that the tanks are a source of soil contamination. The above ground storage tanks were not used in the scoring of the Owens Illinois site due to the fact that they were removed prior to CERCLA investigations conducted at the site.

3.3 SURFACE IMPOUNDMENT

There are three surface impoundments that were utilized at the site after glass making operations. The impoundments were used to cool the water and settle out skim oil. After the water had passed through the surface impoundments, it was discharged to the Mississippi River via an NPDES discharge point. None of the impoundments have been backfilled and all still contain water. The total area of all three lagoons has been estimated at 18,000 square feet.

Only sediments from the first surface impoundment in the series of three were sampled. Sample X202 was collected at the point where discharge from the plant entered the lagoons. Analysis of this sample revealed elevated concentrations of some PNAs and PCBs. Some metals in X202 exceeded the severe effect level of the Ontario Sediment Standards.

SECTION 4

MIGRATION PATHWAYS

4.1 GROUNDWATER PATHWAY

The Owens Illinois plant is located in the Mississippi River Valley of the East St. Louis area commonly referred to as the "American Bottoms". Large supplies of groundwater are withdrawn in the area from permeable sands and gravels in an unconsolidated valley fill. This valley fill is made up of recent alluvium and glacial material and is underlain by Mississippian and Pennsylvanian rocks consisting of limestone dolomite with some sandstone and shale. The alluvial and glacial materials average a depth of 120 feet throughout the "American Bottoms" area. The most favorable water yielding deposits occur near the bedrock and averages 30 to 40 feet in thickness. Groundwater recharge in the area is from precipitation, induced infiltration of surface water from the Mississippi River, and subsurface flow from the bluffs bordering the area.

Within the four mile target distance limit the East Alton Water Department operates eight wells located approximately two miles southeast of the site. These wells range in depth from 90 to 108 feet and provide service to 7,096 people. The Wood River Department of Public Works operates five wells roughly 3.5 miles southeast of the site. These wells range in depth from 79 to 95 feet and provides service to 12,466 people. Neither of these public water operators have reported contamination problems that

could be attributed to this site. Both of these public utilities participate in the IEPA's Public Water Unit's water quality testing.

Analysis of groundwater samples collected from on site monitoring wells revealed metals at concentrations that meet HRS criteria for an observed release. These samples were compared to an upgradient monitoring well that is located on site as well. The source of these contaminants is not completely clear given the nature of past operations at the facility. What is clear is that similar contaminants were found in on site soils. Refer to the analytical results and sampling map located at the end of the narrative section of this report.

4.2 SURFACE WATER PATHWAY

Drainage of the site is towards the south via Shield's Branch that runs through the eastern portion of the property and leads to a drainage ditch along the levee to the south. Shields Branch originates in the residential area north of the site. Shields Branch is also the drainage for the storm sewer system in the area. The ditch meanders along the levee towards the east for approximately two miles where it discharges to the Mississippi River. Owens Illinois also utilized a NPDES discharge to the Mississippi River to drain the surface impoundments.

According to U.S. Department of the Interior "National Wetlands

Inventory" maps, wetland areas do exist on site. There are roughly 25 miles of wetland frontage along the surface water pathway. There is one surface water intake along the 15 mile target distance limit. It was not evaluated due to its distance from the site and the volume of water passing the intake.

The site is located outside any floodplain as designated by the Federal Management Agency Flood Insurance Map for Alton, Illinois. A review conducted by the Illinois Department of Conservation revealed no sensitive environments within the 15 mile surface water target distance limit. The Mississippi River is a major fishery and an important flyway for migratory waterfowl and receives heavy recreational use.

Analysis of sediment samples collected from Shield's Creek and one of the surface impoundments utilized by the facility revealed contaminants that meet HRS criteria for an observed release. The contaminants found during the analysis include semi-volatiles, PCBs, and metals. Refer to the analytical results and sampling map located at the end of the narrative section of this report.

4.3 AIR PATHWAY

Air samples were not collected during the 1995 CERCLA inspection. The potential for a release to have occurred does exist based upon a citizen complaint that uncovered waste piles were located on site during the 1983 demolition. Also, a foundry was in

operation at the facility from approximately 1930 until the plants final closure in 1993 as mentioned earlier in the report.

There are no schools or day care facilities within 200 feet of the site. A residential area is located roughly 150 feet north

Table 4-1
Estimated Air Target Populations

On a source	**3**
>0 to 1/4 mile	**400**
>1/4 to 1/2 mile	**2,500**
>1/2 to 1 mile	**5,400**
>1 to 2 miles	**16,000**
>2 to 3 miles	**13,000**
>3 to 4 miles	**7,500**

of the site. According to U.S. Department of the Interior "National Wetlands Inventory" maps, there are approximately 30 acres of wetlands on site with another 100 acres within a one mile radius.

4.4 SOIL EXPOSURE PATHWAY

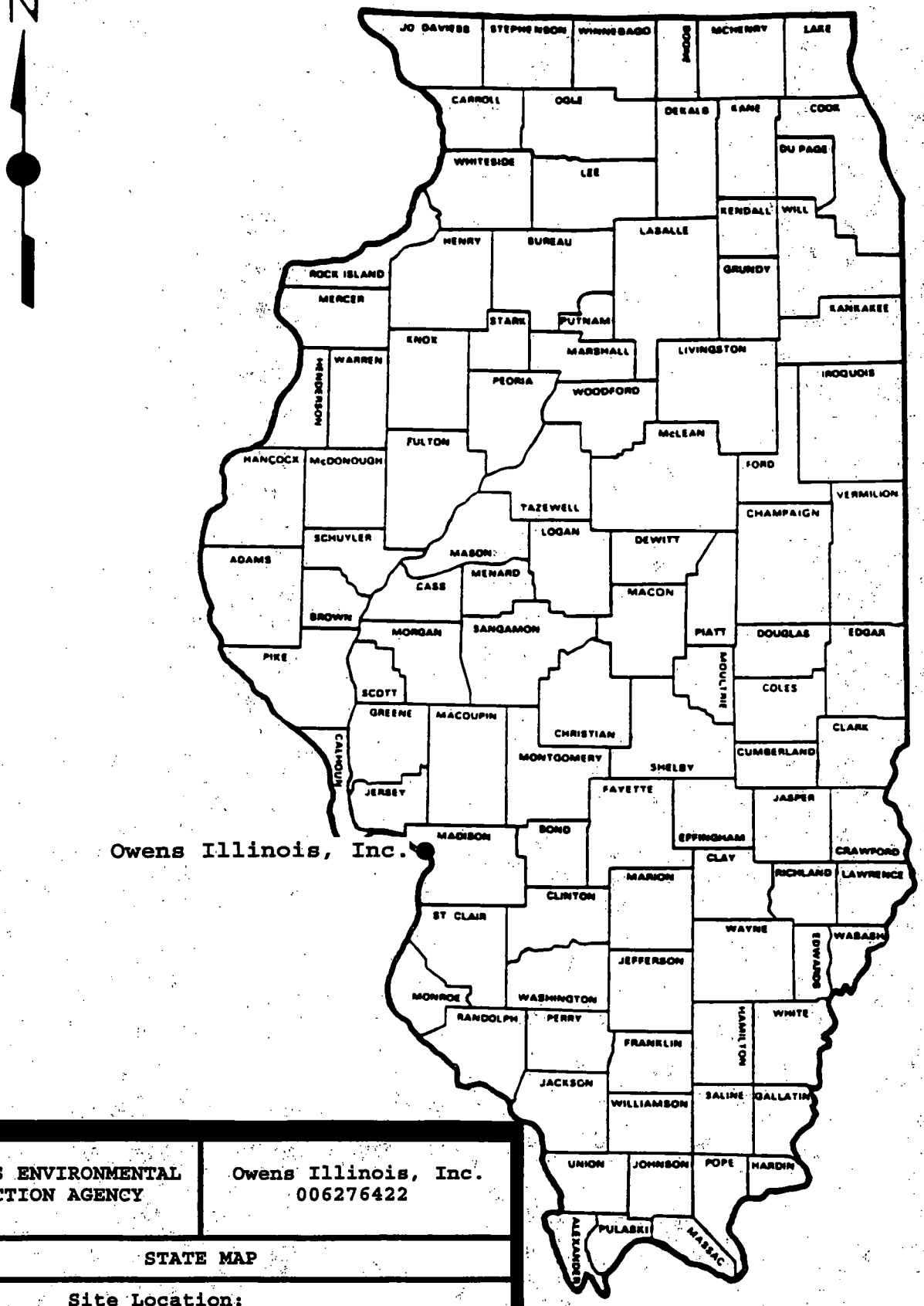
Analysis of samples collected during the CERCLA inspection indicate the presence of volatiles, semi-volatiles, PCBs, and metals in soils at the facility. A shallow soil sample was collected in the area of the tank farm, which revealed PNAs at concentrations well above background. Deep soil sample X104 was collected from the landfill area which also revealed contaminants at concentrations above background. None of the neighboring properties were sampled.

There are no school or day care facilities within 200 feet of the site. A large residential area is located approximately 150 feet

Table 4-2
Estimated Soil Target Populations

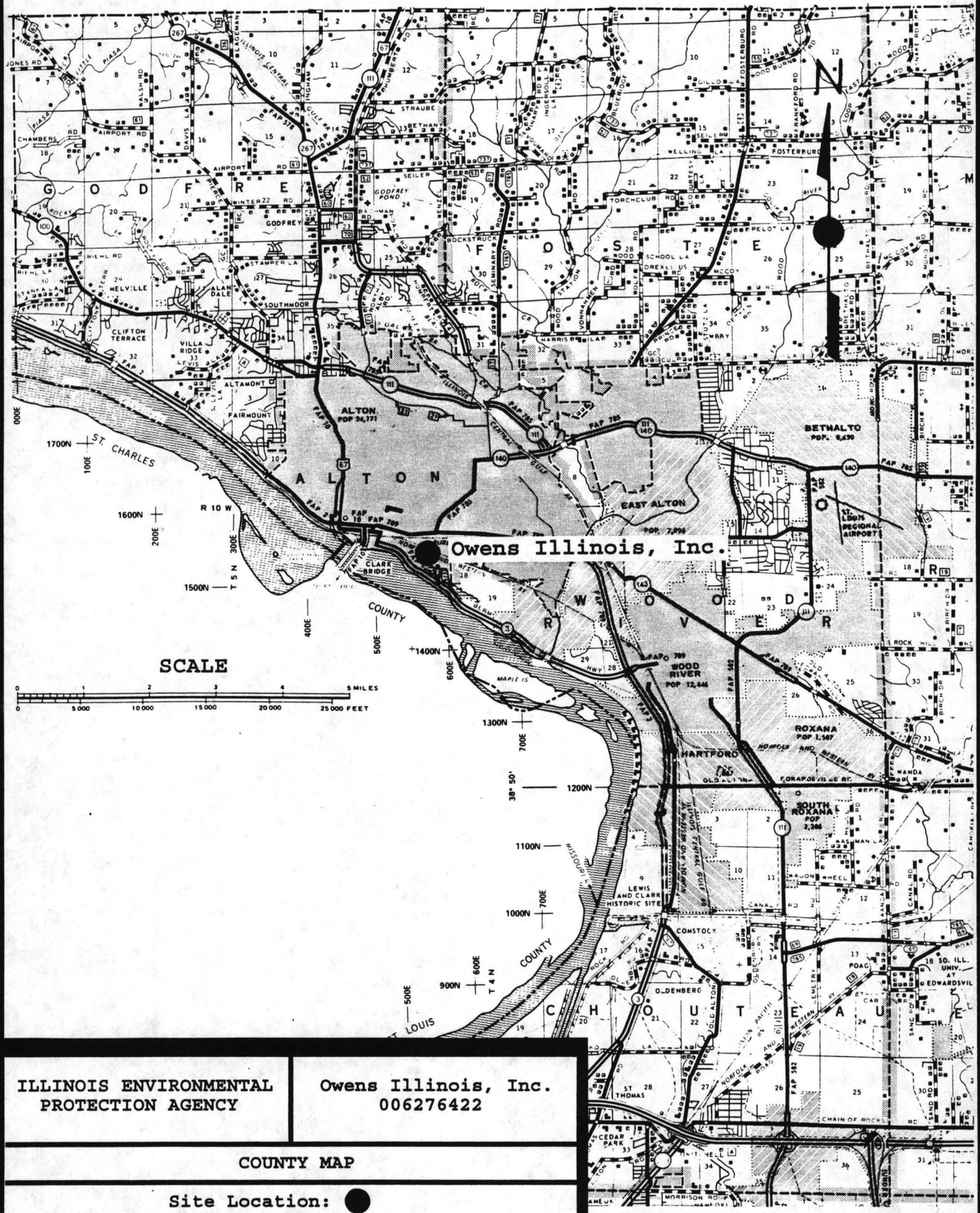
On a source	**3**
>0 to 1/4 mile	**400**
>1/4 to 1/2 mile	**2,500**
>1/2 to 1 mile	**5,400**

feet north of the site. A review conducted by the Illinois Department of Conservation revealed a state threatened mussel (Ellipsaria lineota) within the 1/2 to one mile radius of the site. According to U.S. Department of the Interior "National Wetlands Inventory" maps, there are roughly 30 acres of wetlands on the southern portion of the property. Access to the site is restricted by 24 hour security and sections of the property are enclosed by fencing. There is evidence that access to the property has been gained by persons other than Owens Illinois employees.

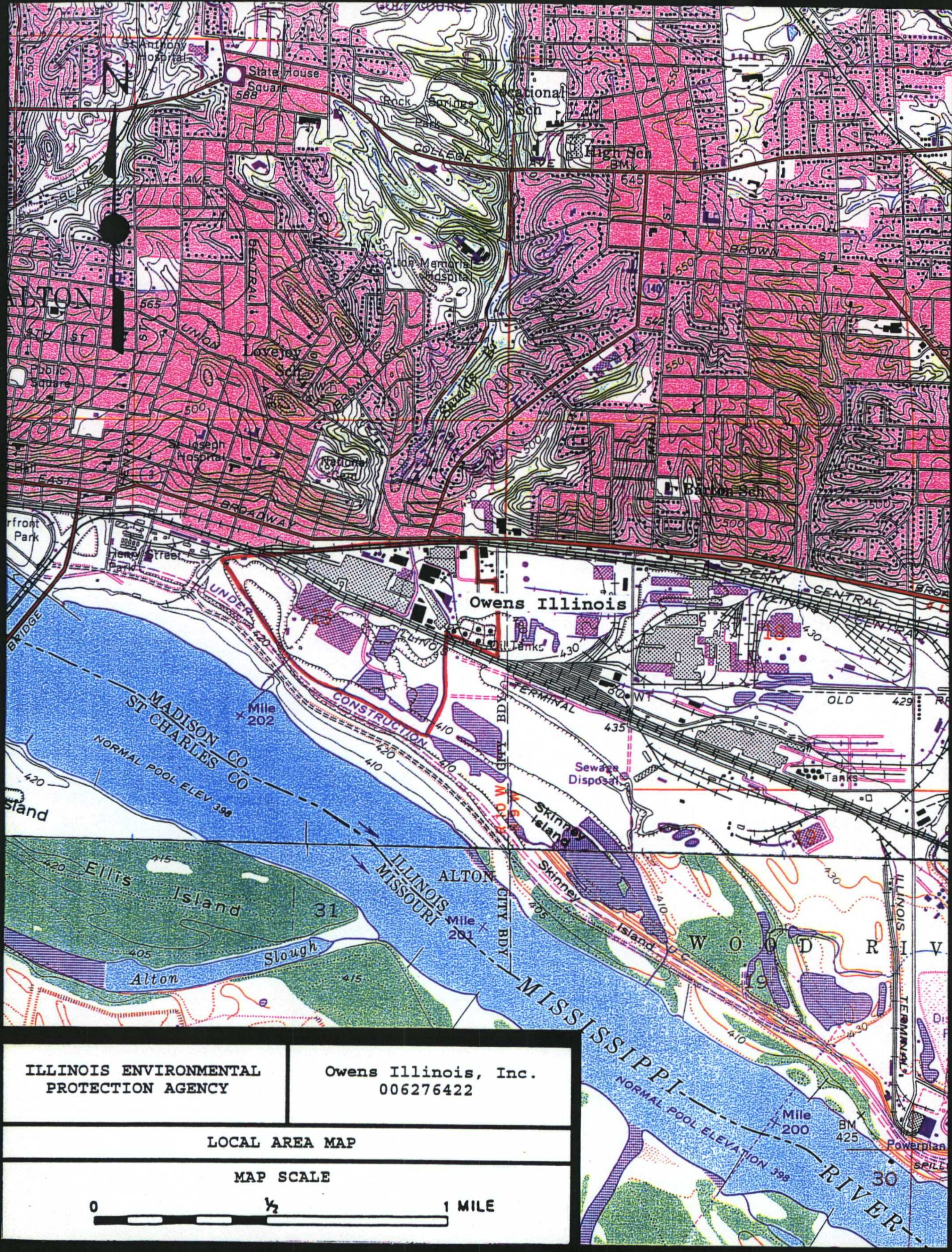


Owens Illinois, Inc.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois, Inc. 006276422
STATE MAP	
Site Location:	



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois, Inc. 006276422
COUNTY MAP	
Site Location: ●	



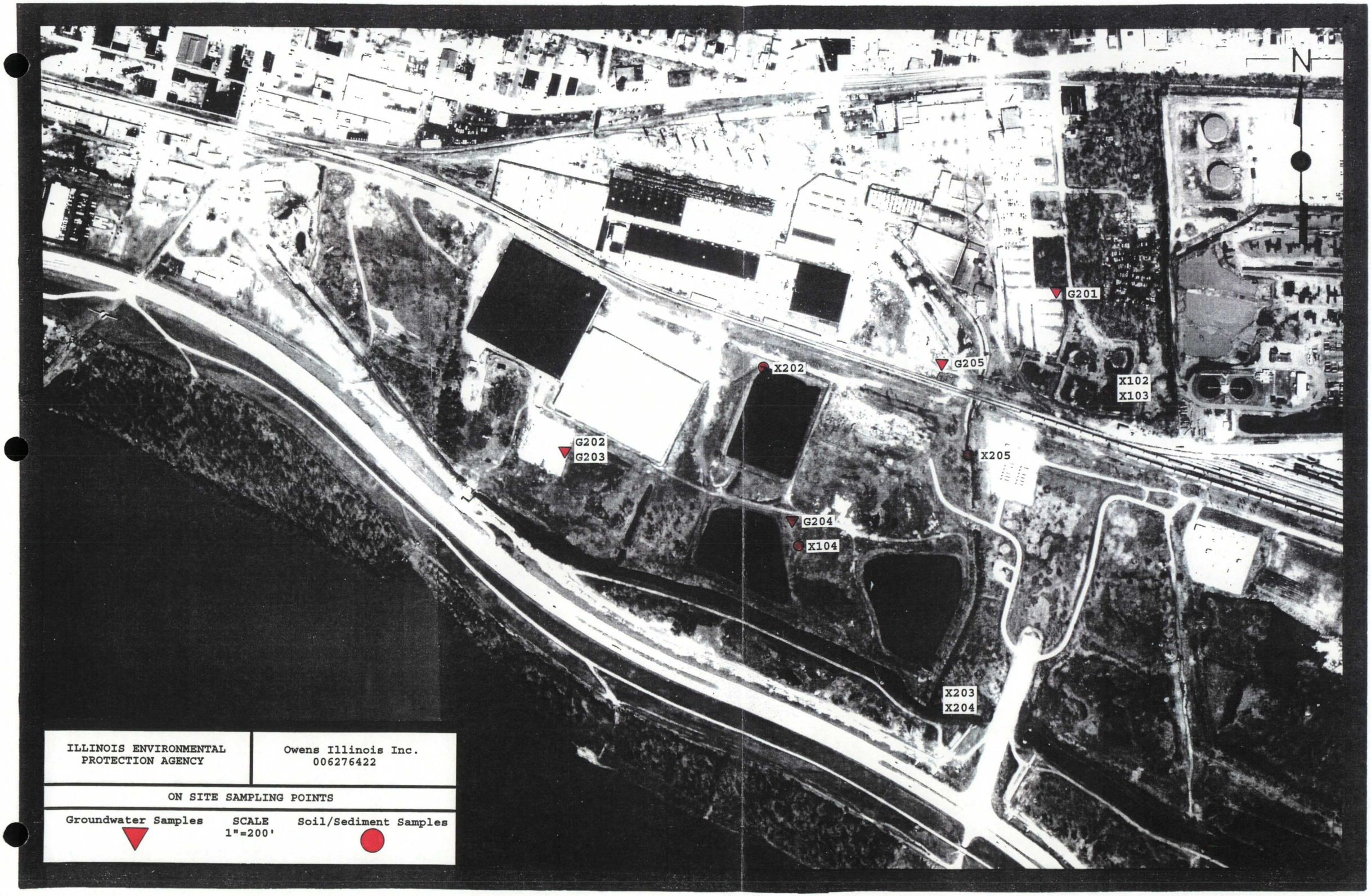
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

Owens Illinois, Inc.
006276422

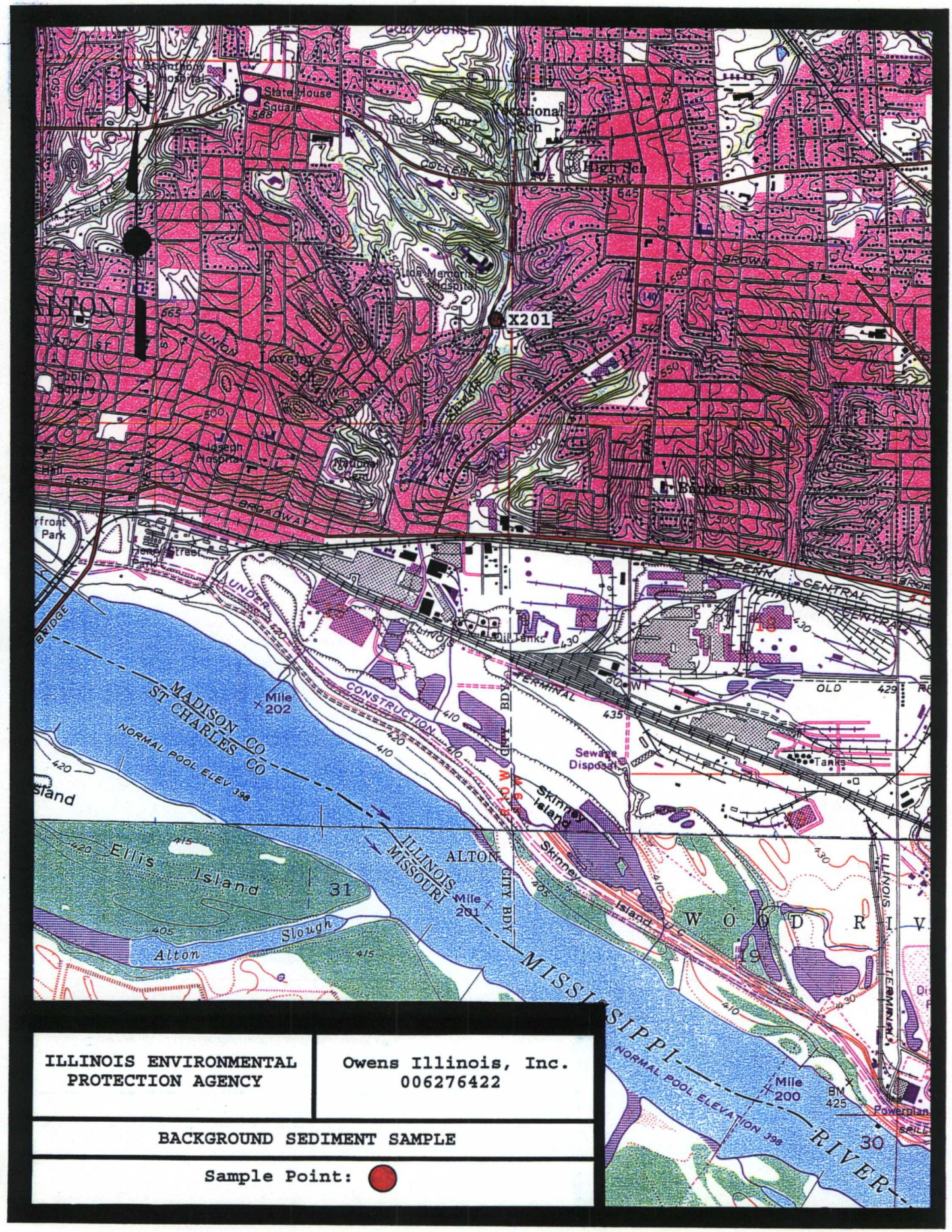
LOCAL AREA MAP

MAP SCALE

0 ½ 1 MILE



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois Inc. 006276422
ON SITE SAMPLING POINTS	
Groundwater Samples ▼	SCALE 1"=200'
Soil/Sediment Samples ●	



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois, Inc. 006276422
BACKGROUND SEDIMENT SAMPLE	
Sample Point:	

SAMPLE DESCRIPTIONS

Sample	Depth	Appearance	Location
X101	0" – 6"	A dark brown loam.	Background soil sample, the one obtained during the 1990 SSI was not representative.
X102 X103	2'6"	Dark black oganic rich silty loam w\gravel.	Duplicate soil samples collected from the tank farm area.
X104	6'6"	Brown clay.	49' south of center of gravel road and 109' east of concrete post nearest the on site landfill.
X201	0" – 6"	Tight gray clay with organic material.	Background sediment sample taken in a residential area north of the site. It is the area in which the drainage ditch that runs through the site originates.
X202	6" – 18"	A mixture of cinders and crushed red brick.	Taken from the drainage ditch that runs through the eastern portion of the property 21' north of the confluence with Shields Creek.
X203 X204	6" – 18"	A dark brown loam with organic matter.	Duplicate sediment sample taken at the confluence of the drainage ditch with Shields Creek.
X205	0" – 12"	Sediment was a tight gray clay with oily sheen.	Taken from the lagoon in which waste oils were either skimmed or allowed to settle out of the wastewater from the plant.
X206	6" – 18"	A brown to black clay with organic matter.	Taken 123' downstream of duplicate samples X203 & X204. This area has also been identified as a wetland.
G201	NA	Clear and odorless with some suspended solids.	Upgradient monitoring well installed in 1983 by a contractor. Draws from same aquifer as on site well.
G202 G203	NA	Clear and odorless with some suspended solids.	Duplicate groundwater samples taken from a downgradient monitoring well.
G204	NA	Clear and odorles with some suspended solids.	Taken from a downgradient monitoring well.

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

SOIL SAMPLES

SAMPLING POINT	X101	X102	X103	X104
PARAMETER	Background Soil	Soil	Soil	Soil
VOLATILES				
Methylene Chloride	3.0 J	--	--	17.0
2-Butanone	12.0 U	4.0 J	3.0 J	--
1,1,1-Trichloroethane	12.0 U	--	--	7.0 J
Xylene (total)	12.0 U	13.0	--	--
	ug/kg	ug/kg	ug/kg	ug/kg
SEMIVOLATILES				
2-Methylnaphthalene	390.0 U	24000.0 E	18000.0	--
Acenaphthene	390.0 U	7200.0	6000.0	
Dibenzofuran	390.0 U	4300.0	--	--
Fluorene	390.0 U	23000.0 E	17000.0	--
Phenanthrene	390.0 U	30000.0 E	93000.0 E	190.0 J
Anthracene	390.0 U	56000.0 E	18000.0	--
Fluoranthene	390.0 U	--	--	270.0 J
Pyrene	390.0 U	--	--	220.0 J
Benzo(a)Anthracene	390.0 U	3200.0	3900.0 J	150.0 J
Chrysene	390.0 U	7700.0	11000.0	140.0 J
	ug/kg	ug/kg	ug/kg	ug/kg
PESTICIDES				
delta-BHC	2.0 U	9.8 P	17.0 P	--
Heptachlor epoxide	2.0 U	--	--	0.2 JP
Dieldrin	0.4 JP	--	--	0.8 JP
4,4'-DDE	3.9 U	--	24.0 P	--
Endrin	3.9 U	80.0 P	84.0 P	4.3 J
4,4'-DDD	3.9 U	--	--	0.6 JP
Endosulfan Sulfate	0.2 JP	--	--	0.2 JP
4,4'-DDT	0.4 JP	--	68.0 P	--
alpha-Chlordane	2.0 U	--	--	0.9 JP
gamma-Chlordane	0.1 JP	--	--	0.9 JP
Aroclor-1248	39.0 U	--	--	18.0 JP
Aroclor-1260	39.0 U	310.0 PR	410.0 PR	20.0 JP
	ug/kg	ug/kg	ug/kg	ug/kg
INORGANICS				
Aluminum	11300.0	2470.0	3840.0	12800.0
Antimony	5.7 U	13.6	9.0 B	--
Arsenic	4.8	5.8	8.3	16.8
Barium	223.0	59.4	67.1	153.0
Beryllium	0.6 B	--	0.3 B	0.7 B
Cadmium	1.0 U	1.2	--	1.6
Calcium	29400.0	129000.0	75900.0	4880.0
Chromium	229.0 J	24.4	23.9	21.4
Cobalt	6.8 B	7.1 B	7.9 B	8.5 B
Copper	38.6	177.0	131.0	31.0
Iron	26600.0 J	14200.0	24800.0	23300.0
Lead	26.3	72.2	89.1	77.7
Magnesium	4770.0	9030.0	6800.0	2960.0
Manganese	4530.0 J	239.0	256.0	635.0
Mercury	0.0 U	0.0 B	--	0.3
Nickel	20.0	17.1	22.7	22.8
Potassium	1510.0	--	--	1130.0 B
Selenium	1.2 U	0.7 B	0.5 B	0.4 B
Sodium	99.1 B	224.0 B	297.0 B	425.0 B
Thallium	0.2 U	--	--	0.3 B
Vanadium	69.1 J	15.9	15.8	28.4
Zinc	96.2 J	227.0	219.0	242.0
Cyanide		1.2	--	--
	mg/kg	mg/kg	mg/kg	mg/kg

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

SEDIMENT SAMPLES

SAMPLING POINT / PARAMETER	X201 Background Sediment	X202 Sediment	X203 Sediment	X204 Sediment	X205 Sediment
VOLATILES					
Acetone	30.0	37.0	18.0	27.0	--
2-Butanone	7.0 J	7.0 J	5.0 J	7.0 J	28.0
1,1,1-Trichloroethane	14.0 U	15.0 J	--	--	--
Toluene	14.0 U	--	--	--	100.0
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SEMIVOLATILES					
1,4-Dichlorobenzene	470.0 U	--	--	--	160.0 J
4-Methylphenol	130.0 J	--	--	--	2100.0
Naphthalene	170.0 J	--	--	--	140.0 J
2-Methylnaphthalene	150.0 J	--	--	--	130.0 J
Acenphthene	440.0 J	--	--	--	990.0
Dibenzofuran	320.0 J	--	--	--	550.0
Fluorene	620.0	--	--	--	980.0
Phenanthrene	4000.0 E	2600.0	92.0 J	--	3900.0
Anthracene	520.0	440.0 J	--	--	860.0
Carbazole	700.0	--	--	--	1300.0
Fluoranthene	1300.0	2600.0	280.0 J	230.0 J	4500.0 E
Pyrene	960.0	2900.0	210.0 J	210.0 J	4500.0 E
Butylbenzylphthalate	470.0 U	--	--	--	350.0 J
Benzo(a)Anthracene	2600.0	850.0	160.0 J	180.0 J	4000.0
Chrysene	2700.0	1200.0	150.0 J	130.0 J	4400.0 E
bis(2-Ethylhexyl)Phthalate	470.0 U	1700.0	210.0 J	110.0 J	2300.0
Di-n-Octyl Phthalate	470.0 U	--	--	--	210.0 J
Benzo(b)Fluoranthene	2400.0	--	--	220.0 J	5700.0 E
Benzo(k)Fluoranthene	2000.0	--	--	--	4000.0
Benzo(a)Pyrene	1400.0	--	--	110.0 J	2700.0
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
PESTICIDES					
alpha-BHC	2.4 U	3.1 JP	--	--	0.9 JP
gamma-BHC (Lindane)	2.4 U	--	--	--	0.6 JP
Dieldrin	3.4 JP	16.0 P	0.8 JP	0.9 JP	24.0 P
Endrin	7.6 P	57.0 P	3.4 JP	2.4 JP	31.0 P
4,4'-DDD	1.3 JP	--	1.2 JP	--	--
Endosulfan sulfate	2.1 JP	--	0.4 JP	0.9 JP	--
4,4'-DDT	0.8 JP	--	0.3 JP	--	--
Methoxychlor	24.0 U	--	--	--	23.0 JP
Endrin ketone	4.7 U	22.0 P	--	--	--
Endrin aldehyde	4.7 U	11.0 P	--	--	--
gamma-Chlordane	6.9	8.4 P	2.7	2.2 J	44.0 P
Aroclor-1248	47.0 U	--	--	--	190.0 P
Aroclor-1254	19.0 JP	460.0	12.0 J	--	--
Aroclor-1260	42.0 JP	340.0	--	--	170.0 P
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
INORGANICS					
Aluminum	6830.0	1600.0	11700.0	11500.0	7510.0
Arsenic	5.7	3.7	6.2	4.2	7.4
Barium	104.0	31.9 B	93.0	101.0	180.0
Beryllium	0.4 B	--	0.5 B	0.6 B	0.5 B
Cadmium	1.3 U	4.4	1.7	1.9	7.2
Calcium	35400.0	18100.0	20100.0	9630.0	24600.0
Chromium	22.2	22.9	19.3	24.7	60.1
Cobalt	6.3 B	--	7.4 B	7.4 B	8.9 B
Copper	17.0	55.8	22.6	36.4	234.0
Iron	12900.0	4820.0	17200.0	24700.0	19500.0
Lead	106.0	325.0	31.6	29.8	241.0
Magnesium	3060.0	2710.0	5410.0	2890.0	3320.0
Manganese	493.0	131.0	366.0	435.0	251.0
Mercury	0.1 B	0.1 B	0.1 B	0.1 B	0.6
Nickel	12.5	57.1	24.8	27.9	286.0
Selenium	1.5 U	2.4	--	--	0.4 B
Silver	1.5 U	--	--	--	6.8
Sodium	158.0 B	293.0 B	168.0 B	133.0 B	199.0 B
Thallium	0.3 U	--	--	0.3 B	--
Vanadium	24.2	7.7 B	26.9	27.5	25.7
Zinc	121.0	172.0	491.0	467.0	4180.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

GROUNDWATER SAMPLES

SAMPLING POINT PARAMETER	G201 Background Groundwater	G202 Groundwater	G203 Groundwater	G204 Groundwater	G205 Groundwater
VOLATILES					
Chloroform	10.0 U	– –	3.0 J	– –	– –
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SEMIVOLATILES					
Diethylphthalate	10.0 U	2.0 J	4.0 J	– –	10.0
bis(2 – Ethylhexyl)Phthalate	10.0 U	– –	– –	9.0 J	18.0 J
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
PESTICIDES					
gamma – Chlordane	0.1 U	0.3 JP	– –	– –	– –
Aroclor – 1254	1.0 U	0.8 J	0.5 J	– –	– –
Aroclor – 1260	1.0 U	0.4 JP	0.3 JP	– –	– –
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
INORGANICS					
Aluminum	2720.0	2150.0	3360.0	272.0	251.0
Arsenic	53.1	24.9	24.8	117.0	17.5
Barium	689.0	230.0	277.0	82.0 B	48.6 B
Cadmium	4.0 U	6.2	9.2	– –	– –
Calcium	153000.0	67000.0	69600.0	75000.0	199000.0
Chromium	5.0 U	39.3	50.3	6.7 B	5.8 B
Cobalt	12.0 U	– –	– –	– –	12.3 B
Copper	6.0 U	321.0	416.0	8.2 B	– –
Iron	12400.0	8980.0	11900.0	1330.0	2320.0
Lead	2.7 B	197.0	264.0	10.7	2.1 B
Magnesium	51400.0	20600.0	21200.0	22600.0	60300.0
Manganese	1260.0	1780.0	1930.0	1060.0	3920.0
Nickel	16.0 U	104.0	147.0	– –	– –
Potassium	7710.0	3620.0 B	4350.0 B	8370.0	4360.0 B
Selenium	5.0 U	7.8 B	11.1 B	1.8 B	– –
Sodium	41700.0	82500.0	84500.0	358000.0	54000.0
Vanadium	9.5 U	140.0	172.0	17.5 B	– –
Zinc	25.2	84.6	111.0	10.0 B	6.9 B
Sulfide	29000.0	– –	7500.0	8500.0	5500.0
Sulfate	10000.0 U	32300.0	30000.0	107200.0	215000.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

KEY
SOIL SAMPLES

SAMPLING POINT	X101	X102	X103	X104
PARAMETER	Background Soil	Soil	Soil	Soil
VOLATILES				
Xylene	12.0 U	13.0	--	--
	ug/kg	ug/kg	ug/kg	ug/kg
SEMIVOLATILES				
2-Methylnaphthalene	390.0 U	24000.0 E	18000.0	--
Acenaphthene	390.0 U	7200.0	6000.0	--
Dibenzofuran	390.0 U	4300.0	--	--
Fluorene	390.0 U	23000.0 E	17000.0	--
Phenanthrene	390.0 U	30000.0 E	93000.0 E	190.0 J
Anthracene	390.0 U	56000.0 E	18000.0	--
Fluoranthene	390.0 U	--	--	270.0 J
Pyrene	390.0 U	--	--	220.0 J
Benzo(a)Anthracene	390.0 U	3200.0	3900.0 J	150.0 J
Chrysene	390.0 U	7700.0	11000.0	140.0 J
	ug/kg	ug/kg	ug/kg	ug/kg
PESTICIDES				
delta-BHC	2.0 U	9.8 P	17.0 P	--
4,4'-DDE	3.9 U	--	24.0 P	--
Endrin	3.9 U	80.0 P	84.0 P	--
4,4'-DDT	0.4 JP	--	68.0 P	--
Aroclor-1248	39.0 U	--	--	18.0 JP
Aroclor-1260	39.0 U	310.0 PR	410.0 PR	20.0 JP
	ug/kg	ug/kg	ug/kg	ug/kg
INORGANICS				
Antimony	5.7 U	13.6	9.0 B	--
Arsenic	4.8	--	--	16.8
Cadmium	1.0 U	1.2	--	1.6
Copper	38.6	177.0	131.0	--
Lead	26.3	72.2	89.1	77.7
Sodium	99.1 B	--	297.0 B	425.0 B
Zinc	96.2 J	227.0	219.0	242.0
	mg/kg	mg/kg	mg/kg	mg/kg

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

KEY
SEDIMENT SAMPLES

SAMPLING POINT PARAMETER	X201 Background Sediment	X202 Sediment	X203 Sediment	X204 Sediment	X205 Sediment
VOLATILES					
2-Butanone	7.0 J	--	--	--	28.0
Toluene	14.0 U	--	--	--	100.0
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
SEMIVOLATILES					
1,4-Dichlorobenzene	470.0 U	--	--	--	160.0 J
4-Methylphenol	130.0 J		--	--	2100.0
Fluoranthene	1300.0	--	--	--	4500.0 E
Pyrene	960.0	2900.0	--	--	4500.0 E
bis(2-Ethylhexyl)Phthalate	470.0 U	1700.0	--	--	2300.0
Di-n-Octyl Phthalate	470.0 U	--	--	--	210.0 J
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
PESTICIDES					
alpha-BHC	2.4 U	3.1 JP	--	--	0.9 JP
gamma-BHC(Lindane)	2.4 U	--	--	--	0.6 JP
Dieldrin	3.4 JP	16.0 P	--	--	24.0 P
Endrin	7.6 P	57.0 P	--	--	31.0 P
Methoxychlor	24.0 U	--	--	--	23.0 JP
Endrin ketone	4.7 U	22.0 P	--	--	--
gamma-Chlordane	6.9	--	--	--	44.0 P
Aroclor-1248	47.0 U	--	--	--	190.0 P
Aroclor-1254	19.0 JP	460.0	--	--	--
Aroclor-1260	42.0 JP	340.0	--	--	170.0 P
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
INORGANICS					
Aluminum	6830.0	--	11700.0	11500.0	7510.0
Arsenic	5.7	--	6.2	--	7.4
Barium	104.0	--	--	--	180.0
Cadmium	1.3 U	4.4	--	--	7.2
Chromium	22.2	--	--	24.7	60.1
Copper	17.0	55.8	--	36.4	234.0
Lead	106.0	325.0	--	--	241.0
Nickel	12.5	57.1	--	--	286.0
Selenium	1.5 U	2.4	--	--	0.4 B
Silver	1.5 U	--	--	--	6.8
Thallium	0.3 U	--	--	--	0.3 B
Zinc	121.0	--	491.0	467.0	4180.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

SITE NAME: Owens Illinois Inc., Alton

ILD# 006276422

KEY
GROUNDWATER SAMPLES

SAMPLING POINT PARAMETER	G201 Background Groundwater	G202 Groundwater	G203 Groundwater	G204 Groundwater	G205 Groundwater
INORGANICS					
Aluminum	2720.0	--	3360.0	--	--
Chromium	5.0 U	39.3	50.3	--	--
Copper	6.0 U	321.0	416.0	6.7 B	5.8 B
Lead	2.7 B	197.0	264.0	10.7	--
Manganese	1260.0	1780.0	1930.0	--	3920.0
Nickel	16.0 U	104.0	147.0	--	--
Selenium	5.0 U	7.8 B	11.1 B	1.8 B	--
Vanadium	9.5 U	140.0	172.0	--	--
Zinc	25.2	84.6	111.0	--	--
Sulfate	10000.0 U mg/kg	32300.0 mg/kg	30000.0 mg/kg	107200.0 mg/kg	215000.0 mg/kg

APPENDIX A
4 MILE RADIUS MAP

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois Inc. 006276422

USGS TOPOGRAPHIC MAPS

NAME: Alton, IL LOCATION: 221B PHOTOREVISED: 1974	NAME: Bethalto, IL LOCATION: 221A PHOTOREVISED: 1974
NAME: Columbia Bottom, IL LOCATION: 221C PHOTOREVISED: 1974	NAME: Wood River, IL LOCATION: 221D PHOTOREVISED: 1974

LEGEND

- PUBLIC WELLS
- SITE LOCATION

SCALE

0 ½ 1 MILE

ILLINOIS

QUADRANGLE LOCATION

APPENDIX B
15 MILE SURFACE WATER MAP

Owens Illinois, Inc.

15 Mile Downstream Limit

N

W E

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY	Owens Illinois Inc. 006276422
15-MILE SURFACE WATER MAP	
Site Location	Surface Water

APPENDIX C
TARGET COMPOUND LIST

TARGET COMPOUND LIST

Volatile Target Compounds

Chloromethane
Bromomethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Carbon Disulfide
1,1-Dichloroethene
1,1-Dichloroethane
1,2-Dichloroethene (total)
Chloroform
1,2-Dichloroethane
2-Butanone
1,1,1-Trichloroethane
Carbon Tetrachloride
Bromodichloromethane
1,2-Dichloropropane
cis-1,3-Dichloropropene
Trichloroethene
Dibromochloromethane
1,1,2-Trichloroethane
Benzene
trans-1,3-Dichloropropene
Bromoform
4-Methyl-2-pentanone
2-Hexanone
Tetrachloroehtene
1,1,2,2-Tetrachloroethane
Toluene
Chlorobenzene
Ethylbenzene
Styrene
Xylene (total)

Base/Neutral Target Compounds

Hexachloroethane
bis(2-Chloroethyl)ether
N-Nitroso-Di-n-Propylamine
Nitrobenzene
Hexachlorobutadiene
2-Methylnaphthalene
1,2,4-Trichlorobenzene
Isophorone
Naphthalene
4-Chloroaniline
bis(2-Chloroethoxy)methane
Hexachlorocyclopentadine
2-Chloronaphthalene
2-Nitroaniline
Acenaphthylene
Dibenzofuran
Dimethylphthalate
2,6-Dintrotoluene
Fluorene
4-Nitrolaniline
4-Chlorophenyl-phenylether
2,4-Dinitrotoluene
Diethylphthalate
N-Nitrosodiphenylamine(1)
Hexachlorobenzene
Phenanthrene
4-Bromophenyl-phenylether
Anthracene
Di-n-Butylphthalate
Fluoranthene
Pyrene
Butylbenzylphthalate
bis(2-Ethylhexyl)phthalate
Chrysene
Benzo(a)anthracene
3,3'-Dichlorobenzidine
Di-n-Octylphthalate
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenz(a,h)anthracene
Benzo(g,h,i)perylene
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene

Acid Target Compounds

Phenol
2-Chlorophenol
2-Nitrophenol
2-Methylphenol
2,4-Dimethylphenol
4-Methylnaphthalene
2,4-Dichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenol
4-Chloro-3-Methylphenol
2,4-Dinitrophenol
4,6-Dinitro-2-methylphenol
Pentachlorophenol
4-Nitrophenol

Pesticide/PCB Target Compounds

alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Heptachlor
Aldrin
Heptachlor epoxide
Endosulfan I
Dieldrin
4,4'-DDE
Endrin
Endosulfan II
4,4'-DDD
Endosulfan Sulfate
4,4'-DDT
Methoxychlor
Endrin ketone
Endrin aldehyde
alpha-Chlrodane
gamma-Chlrodane
Toxaphene
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260

Inorganic Target Compounds

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Silver
Sodium
Thallium
Vanadium
Zinc
Cyanide
Sulfide
Sulfate